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ABSTRACT

Several studies have suggested that students working in groups with computer-assisted instruction (CAI) learn equally as well as students who work alone. Since one advantage of CAI is its ability to individualize and thereby improve instruction, some explanation is needed as to how equivalent learning can be effected in groups. A model of differential interpretation of feedback is offered which explains how individualized learning can take place within a group setting. The model asserts the importance of careful design of feedback statements for optimum individual learning within group settings. (Author/JY)

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DIFFERENTIAL INTERPRETATION OF FEEDBACK IN SMALL GROUPS

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Differential Interpretation of Feedback in Small Groups

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ABSTRACT

Several studies have suggested that students working in groups with computer-assisted instruction (CAI) learn equally as well as students who work alone. Since one advantage of CAI is its ability to individualize and thereby improve instruction, some explanation is needed as to how equivalent learning can be effected in groups. The present paper proposes a model of differential interpretation of feedback to explain how individualized learning can take place within a group setting. The model asserts the importance of careful design of feedback statements for optimum individual learning within group settings.

Differential Interpretation of Feedback in Small Groups

A number of studies of programmed instruction (PI) (Bartley, 1966; Sawrie, 1966; Kay, Dodd, & Sime, 1968) and computer-assisted instruction (CAI) (Goodman, 1968; Love, 1969; Cartwright, 1971, 1973; Cohen, 1975; Okey & Majer, 1975) have suggested that students who work in groups learn as well as students who work alone. Comparisons of individual performance between students working alone and students working in groups usually indicate no significant differences in mean learning scores or variances (Cartwright, 1973).

In most of these studies, small group discussion is utilized to achieve response consensus. With CAI for example, the group is asked to converge on a single response which is then evaluated by the computer. Feedback from the computer is based on that single group response.

Bearing in mind the role of reinforcement in the learning process, it may well be asked how such generalized feedback in response to collective group action can affect the learning of an individual. This is especially true if that individual did not agree with, or even participate in, the original response decision.

It is difficult to imagine how the performance of an individual, learning under such circumstances, can equal the performance of individuals working alone. The question is an important one, especially for those who espouse group work, since there is a positive relationship between the number of people in each group and the potential

number of disagreements thereto.

One possible explanation is that where there is disagreement among group members, generalized feedback is differentially interpreted by the various group members. It is suggested that each group member interprets the feedback message in light of his original contribution to the group decision-making process and not to the explicit response finally selected. Although the computer provided feedback in response to the group decision, that feedback was differentially interpreted by each group member. The following simplistic example illustrates this point.

A group of three working on a psychology lesson is asked by the computer to name the parameter which used air from receptors to the external environment. Two members of the group incorrectly believe the answer to be "eardrum". The third member thinks the answer is "eardrum" but is not sure and the incorrect response is entered. The computer then returns the response and includes the feedback message, "No, the correct answer is 'eardrum'." Each group member reads the same feedback statement. However, while they all read the same words, the message received varies.

The two members with the incorrect answer are more than happy to have been incorrect. Although the computer never evaluated the response by the third group member with the correct response, he was known that he or she had been right all along, and incidentally, that his partners were wrong. To compare the feedback statements, and against the response the group entered, but against his own original implicit response. The feedback statement is the same, but the message interpretation varies.

[illegible] [illegible] [illegible] [

Figure 1